

REMARKS

Claims 1-5, 8-13, 16-23, 26-34, 37-53 are currently pending in the application.

Claims 1, 5, 11, 20, 31 and 37 have been amended and Claims 38-53 have been added. No new matter has been added. The support of the amendment can be found on page 5-6 and

5 Figures 4-5 of the application.

Objection on Priority

The Examiner objected to the priority statement in the specification, which does not match with the record in the Office. Applicants have concurrently filed a Request for Issuance of Corrected Filing Receipt and a copy of the Request and related supporting papers

10 are enclosed for your review. Consequently, this objection is traversed.

Oath/Declaration

The Examiner also requested a new Declaration with the filing date of June 20, 2000 for the Provisional Application No. 60/212,552. As indicated above, since the recorded filing date for the Provisional Application in the Patent Office is incorrect, Applicants believe that

15 the new declaration is not necessary at this time.

Claim Rejections under 35 USC §112

Claim 37 is rejected under 35 USC §112 as being indefinite for failing to particularly point out and distinctly claim the subject which applicant regards as the invention. Claim 37 has been amended in accordance with the Examiner's suggestion. Accordingly, Applicants

20 respectfully submit that the rejections under section 112 are overcome.

Claim Rejections under 35 USC § 103

Claims 1-5, 8, 10-13, 16, 18-23, 27, 31-34, and 37 are rejected under 35 USC § 103(a) as being unpatentable over Ermer et al. (U.S. Pat. No. 6,380,601), hereinafter called “Ermer”, in review of Wiesmann (U.S. Pat. No. 4,634,605), hereinafter called “Wiesmann”. Without
5 admitting that Ermer and Wiesmann are prior art and reserving the right to establish that Ermer and Wiesmann are not prior art, Applicants respectively disagree with this reason for rejection.

Applicants submits that neither Ermer nor Wiesmann discloses or suggests the following elements recited in the amended claim 1:

10 a first cell layer comprising a germanium (Ge) substrate having a first and second diffusion regions doped with n-type dopants, wherein the second diffusion region diffuses deeper into the Ge substrate than the first diffusion region, wherein the n-type dopants in the first diffusion region includes phosphorus (P) atoms having a higher dopant concentration and the n-type dopants in the second diffusion region includes arsenic (As) atoms having a higher dopant concentration;
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Ermer discloses one region 30 within the Ge substrate 22, which is adjacent to the first surface 24. See Figure 1 and column 3, lines 1-3 of Ermer. Although Ermer discloses region 30 being a phosphorus-doped germanium region, Ermer never discloses a second diffusion region diffuses deeper into the substrate than the first diffusion region as claimed by the present invention. Furthermore, Ermer has never mentioned a second diffusion region having a higher As dopant concentration as claimed by the present invention. Similarly, Wiesmann also fails to disclose two diffusion regions wherein the second diffusion region diffuses deeper into the substrate than the first diffusion region. To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.
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In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). MPEP Section 2143.03. The Applicants respectively submit that neither Ermer nor Wiesmann discloses or suggests two

diffusion regions in a substrate wherein the second diffusion region diffuses deeper into the substrate than the first diffusion region.

The Applicants respectfully submit that a desired outcome that the invention provides cannot be used as the motivation to combine the references if there is no such teaching in the references. The Applicants respectfully disagree with the assertion made in the Office Action that “it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modify the dopant in the device and method of Ermer et al to use both phosphorous and arsenic as taught by Wiesmann.” See page 5 of the Office Action mailed on January 29, 2003. Since neither Ermer nor Wiesmann teaches or suggests a combination between Ermer nor Wiesmann, the Applicants contend that there is no teaching to combine.

Even assuming for the sake of argument that Ermer and Wiesmann were combined, the combination would still fail to teach or suggest two diffusion regions in a substrate wherein the second diffusion region diffuses deeper into the substrate than the first diffusion region as claimed in the present invention. Accordingly, one of ordinary skill in the art would not combine Ermer and Wiesmann, because even if they were combined, the combination would still fail to disclose or suggest all limitations disclosed in claimed invention.

At least for the above- stated reasons, the Applicants believe that Claim 1 is patentable over Ermer in view of Wiesmann under §103. Since Claims 11, 20 and 31 contain similar limitations as Claim 1, Claims 11, 20 and 31 should also be patentable over Ermer in view of Wiesmann. Furthermore, Since Claims 2-5, 8-10, 12-13, 16-19, 21-23, 26-30, 32-34 and 37 depend from allowable independent claims, they should also be patentable over Ermer in view of Wiesmann under §103.

The Applicants respectfully disagree with the Examiner's various "well-known" assertions through out the Office Action and the Applicants reserve the right to argue the validity of the "well-known" assertion if the need arises in a later time.

Claims 9, 17 and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over

5 Ermer in view of Wiesmann and further in view of Stanery (U.S. Pat. No. 4,322,571).

Moreover, Claims 28-30 are rejected under 35 U.S.C §103(a) as being unpatentable over Ermer in view of Wiesmann, and further in view of Gibbons (U.S. Pat. No. 4,001,864).

Federal Circuit has ruled that if independent claims are valid, the claims that depend from the independent claims should also be valid as matter of law. See *Jenric/Pentron, inc. v. Dillon Co.*, 205 F.3d 1377, 1382 (Fed. Cir. 2000). Since Claims 9, 17, 26, 28-30 depend from Claim

10 1, 11 and 20, respectively, Claims 9, 17, 26, 28-30 should be patentable because Claims 1, 11 and 20 are patentable as discussed earlier.

CONCLUSION

Based on all of the above, Applicants believe all claims now pending in the present
15 application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If there are any additional charges concerning this response, please charge to White & Case LLP Deposit Account 23-1703. Applicants thank the Examiner for carefully examining the present application and if a telephone conference would facilitate the prosecution of this
20 application, the Examiner is invited to contact Jim Wu at (650) 213-0300.

Respectfully submitted,

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